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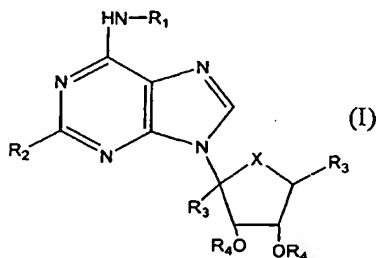
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(54) Title: PURINE NUCLEOSIDES



(57) Abstract: Disclosed are purine nucleoside compounds that are selective to A<sub>3</sub> adenosine receptors and are useful for the treatment of cancer and inflammatory diseases. The compounds are shown by the following general formula (I), including isomers thereof: wherein X is sulfur or oxygen; R<sub>1</sub> is hydrogen, alkyl, benzyl, halobenzyl, or phenylalkyl; R<sub>2</sub> is hydrogen, halogen, alkoxy, alkenyl, alkynyl, alkylthio, or thio; R<sub>3</sub> and R<sub>3</sub>' are hydrogen, hydroxyalkyl, alkoxyalkyl, or alkylaminocarbonyl, whereas R<sub>3</sub> and R<sub>3</sub>' do not have identical substituents simultaneously; and R<sub>4</sub> is hydrogen or alkyl. Also disclosed are a pharmaceutical composition comprising a compound of formula (I), an isomer, or its pharmacologically acceptable salt as an active ingredient and a method for preventing or treating various diseases, state, or condition, including asthma, inflammation, cerebral ischemia, heart diseases, and cancer.